Privacy & Security Standards Workgroup
Draft Transcript
March 16, 2011

Presentation

Judy Sparrow – Office of the National Coordinator – Executive Director
Good morning, everybody, and welcome to the Privacy and Security Standards Workgroup. This is a Federal Advisory Committee, so there will be opportunity at the end of the call for the public to make comment. Just a reminder, workgroup members, to please identify yourselves when speaking.

Roll call: Let me do Dixie Baker.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
I'm here.

Judy Sparrow – Office of the National Coordinator – Executive Director
Walter Suarez?

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Here.

Judy Sparrow – Office of the National Coordinator – Executive Director
Anne Castro? Steve Findlay? Dave McCallie?

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Here.

Judy Sparrow – Office of the National Coordinator – Executive Director
Wes Rishel? Sharon Terry?

Sharon Terry – Genetic Alliance – President & CEO
Here.

Judy Sparrow – Office of the National Coordinator – Executive Director
Steve Ondra? Mike Davis?

Mike Davis – Veterans Health Administration – Senior Security Architect
Here.

Judy Sparrow – Office of the National Coordinator – Executive Director
John Moehrke? Adam Green?

Adam Greene – Office of Civil Rights – Senior HIT & Privacy Specialist
Here.

Judy Sparrow – Office of the National Coordinator – Executive Director
Ed Larsen? Kevin Stein? John Blair? Avinash Shanbhag is on from ONC. So I'll turn it over to Dixie.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
First of all, I want to thank everybody for dialing in today. This is a very packed agenda that we have today and the first thing we wanted to do is to present to you what we hope is the final version of the slides we've put together for digital signatures for our requirements and evaluation criteria for digital

certificates. Those slides are really divided into two parts. The first part are our recommendations for the requirements for the standards and the evaluation criteria that we will use in determining whether the standards meet those requirements. Along with that—and this portion is the portion that we'll be presenting to the Standards Committee later this month—is a recommendation that ONC under take a study of the feasibility of achieving cross-certification between direct health information services providers and the Federal Bridge. The second part of our recommendation is directed—well initially towards the Standards Committee, but ultimately toward the Policy Committee. That is the recommendation to look at potential policy for assuring the trustworthiness of both digital certificates and digital certificate providers.

So I've distributed these slides as part of the package. I want to thank Mike Davis for his help in putting together the slides around the Federal Bridge and helping me understand what bridges currently exist, as well as the relationship between the Federal Bridge CA and the Nationwide Health Information Network. I'd like for you to look at those slides and hopefully you've done so already. If you have any comments right now, I would welcome them and if you'd like to send me comments later, I would welcome those as well.

Let me finish with the agenda. The second part of the agenda is really to look at standards for enterprise level provider directories. We're very pleased to have with us today Avinash Shanbhag, who is the new ONC Director of the Nationwide Health Information Network. Avinash, we're very glad to have you with us today. I think Arien Malec may be joining us a little later as well. So, we hope by the end of today to have at least a fundamental understanding of what the needs of the Nationwide Health Information Network and the Direct Project are with respect to enterprise level provider directories and to have a good understanding of the areas in which we need to recommend requirements.

With that, are there any questions about the agenda first? Okay.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
You may want to move the slide forward on the screen. Thank you.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Thank you, Walter. Then move it one more step. Slide forward again, please. So let me stop here and ask whether you have any further comments about the materials we've put together on digital certificates. Okay.

Do you think that we've effectively conveyed the messages we need to convey in the slides? Also, another change I made was I tried to make the slides for the Policy Committee a little less content packed and more focused at a higher level to the key points that we wanted to make. All right.

With that, you can move the slides forward to the part where it says—I think it's like around slide 20. Let me see—19. I wasn't too far off. Okay. Good.

Walter, do you want to take over at this point, please?

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Well, let me say this, Dixie. This call is for two and a half hours, so if you want to spend a few more minutes on any of the digital certificate final slides we have plenty of time. This call is until 1:00 p.m. So I don't know if that is something you want to do or we can just jump in and start talking about the provider directory. That's fine with me.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Well, it sounds like you see a need to go through—

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Dixie, we left one question up in the air at the end of the last call that I was curious to know where we resolved and that was the question about the interoperability of the existing NHIN Exchange with the—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
That's a good point.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
—the DA. It looks like you've got some slides on that and I just wanted to close the loop on that because that seemed like an important question.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. Let's do. I think Walter has a good point. I was thinking this was an hour and a half, but it is two and a half hours. Who is the slide person? Would they please go back to slide three? We'll go through those quickly and I'll show you the key points that were changed. Okay.

These are our recommendations for requirements. As you suggested, for each—for the Direct Exchanges and for the Nationwide Health Information Exchanges we simply have that they must include the basic certificate fields defined in 5280. They must include those standard extensions that are required to support the secure e-mail in case of Direct and transport layer security in the case of the NwHIN. We included that they may include additional standard extensions, as defined in 5280. Also, you'll recall that we had the conversation about On-line Certificate Status Protocol (OCSP), so in that last bullet, we said that the CRLs must conform to 5280 and we noted that 5280 does support OCSP as a protocol for retrieval of revocation. Questions? Okay.

Next slide: There were no changes to this slide, so next slide and the next slide.

These are the slides about cross-certification. You'll remember that we had one slide in the set where we were formally going to recommend to the Policy Committee that they look at the need for cross-certifying the direct certificate authorities with the Federal Bridge CA and we decided that this might be something. We do have some data about it and so we decided that it might be better to recommend that the ONC look at the feasibility and practicality of cross-certifying certificate authorities that are providing certificates for Direct with the Federal Bridge. So these bullets were really taken from that, from further back in the deck that we looked at last time. One thing that John Murphy and Mike both confirmed for me is that the NwHIN is in fact cross-certified with the Federal Bridge CA. The NwHIN managed PKI is cross-certified with the Federal Bridge CA.

Next slide: I think the next one is mine. This is a picture that Mike Davis pointed me to. The reference is there at the bottom of the slide, but the Federal Bridge CA is cross-certified with two other bridges; one, which I think is really key to our topic at hand is the SAFE-BioPharma Bridge and it's cross-certified with one called Certipath Bridge, which is for the aerospace and defense industry. Then, of course, it serves as the CA—it's cross-certified with the Federal Root CA. Then I added to that picture in the lower right-hand corner it is cross-certified with the NwHIN PKI, managed PKI as well, so this is the way that it exists today.

Up in the upper left-hand corner you'll see an icon for peer-to-peer, cross-certification relationship. Okay? So the cross-certification with entities that are not—it's cross-certified with two bridges, which are federal and of course, the NwHIN now is not federal as well. At the top you'll also see there are some states, like Illinois up there, that it's cross-certified with. Okay.

Next slide: These are the list that we have that the Direct Project relies on a multi-root model where certificates are generated by various certificate authorities without a common root, such as the HISP. Both the NwHIN and Direct users will need to exchange health information with federal agencies and most specifically the VA and Medicare. So our question is how feasible would it be to require that certificates used in Direct exchanges be obtained from CAs that are linked to a bridge or CA cross-certified with a Federal Bridge CA.

The next slide I think depicts what this might look like.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

Dixie, before you go on, could you distinguish between the links, which have the peer-to-peer icon and the ones that have whatever that other icon is? I don't recall the distinction. What does peer-to-peer mean?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
They're all peer-to-peer. It means cross-certification. They certify each other.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
So the little one that looks like an X, is that just meaning that doesn't exist yet?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Go back to the previous slide, please.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes. I'm looking at the off-line deck. Yes.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Slide ten. Yes.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
They're all the same.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
No, go forward to slide—I think it's slide ten in the deck. Yes, that one there. Some of those links have a little X and some of them have what looks like a double certificate. Is that just the difference between ones that exist and ones that are future?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
What do mean little Xes?

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Maybe it's the icon is missing. You have some with an icon that's marked peer-to-peer or cross-certification relationships. Maybe it's just a slide/icon issue. Hang on a second.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Maybe it's your slides, because—

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes. It's the deck that got distributed. It's missing that icon in some of them. I don't know why. Okay. Never mind, I see on the screen they're all consistent.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. They're intended to be consistent.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
In the deck that got sent out some of them are missing. Maybe that's just on my copy.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
I don't know. I'm looking at the deck that was sent out and I don't see any missing.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
You don't see it? Well, on my copy they're missing, but anyway—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
They're the center branding.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
I'm running on a Mac. That's probably what the issue it.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
That's probably it.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
It's not cross-certified.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. There's not intended to be any distinction.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes. It just looked like there was two classes and that's what was confusing me, but I see now—

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
The slide shows that—if I'm understanding what your point is, David, under the Federal Common Policy Framework CA all of the ones that go Treasury, VeriSign, ORC, Verizon Business, Entrust, they have only one little certificate; whereas, all of the other ones have two little certificates. Is that what you're pointing to?

David McCallie – Cerner Corporation – Vice President of Medical Informatics
That was what my question was, but when I look at it on the screen it looks like they're all the same, so I think it's just an abnormality in this slide deck that I've got.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Well, the ones underneath the Federal Common Policy Framework CA are just entities for whom the Federal Common Policy Framework CA are the CA, are issuing them certificates, so those are not cross-certificates. Those are just issuance of certificates. I didn't—

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
So what is missing, perhaps, on this slide is a description of what that single certificate means versus what the double certificate, which is the pure—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Right, but he didn't mention single certificate. He talked about an X.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes and the X is the missing icon symbol in PowerPoint, but I think Walter's point is correct as well. I mean there are two icons even on the correct slide, only one of which has a legend. So that might be useful for future reference, but my problem is my problem and I shouldn't have brought it up. I've got a bad deck somehow. So you may go back to what you were doing. I'm sorry.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Okay. No. I appreciate that and I will add that icon to the key there. I thought it was obvious, but I guess it's not. Okay.

Next slide: This is the picture where—this isn't the former picture—this is a picture where I've added two things. I've added in the lower left-hand corner a direct—now, this is obviously notional. This is not recommending that this is the architecture or anything like that, but there are basically, as shown in the previous picture, two ways that you could achieve this cross-certification for Direct CAs. One is by having a Direct Bridge that the HISPs would then connect to and that should have little, single certificates down

here as well. The second is to have the HISP itself cross-certified with the Federal Bridge. So this is simply a notional depiction of two ways in which that could be achieved.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
So, Dixie, to say that again, on the question that we're asking for recommendations or for investigation of how feasible would it be, do we need to enumerate what that means, in other words, why this is not a no-brainer? I mean is that the whole point of the investigation is to figure out if it's feasible or do we want to talk about cost, complexity?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
I thought that's why we were—I think in the next slide, we depict exactly what we're asking—

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Okay.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
But we're asking about the cost and—

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes. I got it, okay. That's good. I just hadn't seen that next slide. That's what I was talking about.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Go to the next slide, please. So here's the real recommendation and if we want to add other things, we certainly can. "To enable Direct users to exchange health information with federal health agencies, the Privacy and Security Workgroup recommends that the ONC investigate architectural and operational alternatives for cross-certifying HISPs with the Federal Bridge." Then one of the things that Mike pointed out to me was this new requirement that is coming into effect this month actually that requires the use of Personal Identify Verification or PIV cards to authenticate to federal systems. What that means, as I understand it, is that anyone who would be any CA or bridge that would be cross-certified with the Federal Bridge CA would then need to use the PIV credentials to authenticate itself.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
So I'm confused. I thought in the last meeting we discussed the notion that the cross-certification supports different levels of assurance, ranging from low to high. Is this saying that only certain levels of assurance that use PIV cards would be allowed to—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. All of them would be. That doesn't mean to issue as I understand it—is Mike on the line?

Mike Davis – Veterans Health Administration – Senior Security Architect
Mike is on the line.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Okay. I believe it means that just the CAs themselves or the bridge itself would need to authenticate itself to the Federal Bridge CA but, Mike, would you confirm that or refute it?

Mike Davis – Veterans Health Administration – Senior Security Architect
Well, this is a PKI solution only, so there are other levels involved, but this allows for the issuance of these interoperable PIV cards for those people, who need them for accessing it who wouldn't get a PIV card otherwise; that kind of a PIV card that the federal government is issuing through the requirements of HSPD-12. So this extends sort of the notion of HSPD-12 to provide an interoperable PIV card to those people, who are outside of the federal government so they can use that kind of credential.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

But it wouldn't be required? Is the implication here that anyone, if, for example, Direct achieves this cross bridging this does not necessarily imply that anyone who uses Direct would have to authenticate with a PIV card?

Mike Davis – Veterans Health Administration – Senior Security Architect
I don't believe so. This only just came out. I'm not a lawyer. I haven't fully understood it myself, but I think the intent here is simply to provide the capability for interoperable PIV cards that wasn't heretofore available.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
I got you.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Yes. I think the question will be whether this is limited to the HISP entity or whether this extends to anyone below the HISP that is going to connect through the HISP to others.

Mike Davis – Veterans Health Administration – Senior Security Architect
Yes. This is simply another option. As Dixie pointed out, there are other CAs that are interoperable with the bridge that issue certificates.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes and the OMB statement that Mike sent to me, which I don't have right in front of me, but it made it pretty clear that it was the entities that were bridging with the Federal Bridge CA.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
So in the statement in the sub-bullet there that says, "Requiring the use of PIV credentials," by whom is what is missing in there—

Mike Davis – Veterans Health Administration – Senior Security Architect
Yes.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
—to authenticate to federal systems.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
And who would be authenticating to the federal system in this case would be the entity that's bridging, that is cross-certifying with the bridge CA.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
So it's only that entity or is it those that link to that entity?

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes, individuals.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Individuals, like me, as a physician, connected to a HISP that is going to cross-certify to the Federal Bridge. Am I going to have to get a PIV because my HISP is—?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Well that's a policy issue. The requirement itself did not say that, but what Mike is saying is if you had a policy—if a HISP had a policy or if CMS had a policy that every entity that exchanges information with us has to authenticate itself with a PIV card, then these entities would be capable of supporting that, because they would have. But I think that they would have authenticated themselves with the PIV card. But I think the OMB statement itself, as I recall what Mike sent to me, just refers to the entity that is cross-certifying with the Federal Bridge CA. I'll send that to you guys so that you can see.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Yes. It might be helpful to clarify that specific point because it might give the impression that just a HISP entity itself that is cross-certifying with a Federal Bridge that needs the PIV; there is a question as to whether anyone using that HISP entity to connect to the Federal Bridge will also need a PIV, including individuals.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Okay. Here's what it says, "The memorandum—" this is the OMB memorandum, "—requires that each agency is to develop and issue an implementation policy by March 31, 2011 through which the agency will require the use of the PIV credentials as the common means of authentication for access to that agency's facilities, networks and information systems. The policy should contain the following requirements." So it's whoever is authenticating itself to a federal agency and then the OMB memorandum requires the development, like I said, of a policy regarding exactly who that is. I think in the specific case that we are addressing here it would mean that to cross-certify with the Federal Bridge CA would require PIV authentication, but I think policy beyond that needs to be locally developed. But I will send you this statement to everybody on the call.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes. I mean I think we don't want to create the impression that we're recommending yet another physical credential for providers to carry around if they want to use Direct—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. That's a very good point.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
—that's a non-starter.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Yes, exactly. That's my point. There might be a need to include in this slide a clarification because it—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Well, we're asking them to investigate exactly what we're discussing. What are the implications? What I tried to say, what I was trying to say—and please tell me how I can say it better—in that bullet is in this investigation that we're recommending we want you to include consideration of the implication of this new requirement.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Along with other things; I mean you're just calling out one particular—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Right. Exactly.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
....

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
But since—

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Yes and whether that is an option or is the only required way. That's really the –

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Well, we don't know how that requirement will be applied. That's what we're talking about now, so we want to say we want you to look into how it could potentially exert an impact into the cross-certification we're trying to achieve. So the study would say we've looked into this and we've determined that the only people that would have to authenticate using a PIV card would be the bridge CAs themselves. Or we've

looked into it and it looks like all of the CAs need to authenticate themselves to the bridge and then the bridge to the Federal Bridge using the PIV card. We don't know its impact and we're saying as you look into this don't overlook the fact that there is this new rule.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Yes. What David's and my comments are trying to help is in adding some clarification to that request to investigate so that it's clear specifically the kinds of elements we want to make sure the investigation includes, but if we want to leave it open I'm fine with that.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
No. I was trying to say that's what I'm trying to communicate and if you, David or anybody else can help me communicate that better, please come up with the words, because that's what I'm trying to say. I'm trying to say when you do this investigation ONC, please consider the various potential impacts of this new rule.

Mike Davis – Veterans Health Administration – Senior Security Architect
That's what I kind of got too, Walter, was the main thing is the three bullets there to look at the cross-certifying HISPs with the Federal Bridge CAs and then it says, "Well, there is this new thing that just came out in February and we don't know what the implication of it is. In fact ... and it's not in the current understanding ... we should think about this as well."

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. That's exactly what I was trying to say. So if I didn't, give me better words, but the main bullet is the main message. So if you have ideas for more effectively communicating what Mike just said very, very well, send them to me and I'll be happy to change it or whatever is needed and I will send you the OMB, everybody, the OMB slides so that you can see what it says, but I don't think we need to interpret it. We're just asking them to consider it.

Mike Davis – Veterans Health Administration – Senior Security Architect
Maybe would something like saying instead of this bullet, say something like federal regulations in this area continue to evolve and should consider those, such as the OMB memorandum?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes and use it as an example.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
That sounds good to me, because I'm sure there's more than one that will have to be considered. But to come back to just kind of the practical question, if I understood from our previous call—and Mike wasn't on the call, so maybe he can clarify if I'm getting this wrong—you could have cross-certification to what you're calling on your slide the Direct Bridge CA. And have individuals, who are provisioned against that CA with a certain level of assurance interoperating with federal partners as long as the level of assurance embedded in their certificate was adequate, but it might not be the same for everyone who is participating in this system. So some people may have authenticated with a PIV card at a high level of assurance and other people may not have, but they could still take advantage of the cross bridge relationship.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. That bullet that you're referring to I remember exactly. It had to do with our question to the Policy Committee about gaining assurance for the CAs that issued certificates to Direct.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Right.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
It really wasn't applying to this. It was trying to point out that there are already ways to discriminate between levels of assurance. That's what that bullet was attempting to address.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Right and that's important, because there was a notion floating around, I think incorrect, that if you wanted to get cross-certification with the Federal Bridge that everyone had to meet a certain minimum level of assurance and those two are decoupled, independent decisions. They're not coupled together.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. It had a parenthetical remark about there are six levels of assurance that you can authenticate to the bridge under—

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Right.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Do you think that we need to mention that on this slide?

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Well, I mean I think you know from the practical point of view I mean it's really clear that ONC is pushing Direct pretty aggressively. I mean if you listened to yesterday's call from the HIE Workgroup, Micky Tripathi's group, I mean they're counting on Direct to account for a tremendous amount of what's going to happen under stage two for meaningful use or at least that's what they're proposing. So any barriers to rolling out widespread use of Direct are going to be really important to bring to the floor quickly. If the complexity of getting appropriate assurance and getting these bridging relationships established is a barrier, then we need to highlight that and either get it addressed or just have everybody warn that there's a big barrier here.

(Overlapping voices)

David McCallie – Cerner Corporation – Vice President of Medical Informatics
A barrier meaning work that needs to be done above and beyond maybe the simple notion of getting an account. It's just we have—

(Overlapping voices)

David McCallie – Cerner Corporation – Vice President of Medical Informatics
The same spirit at the DEA thing where we've had plenty of warning and everybody is ramping up slowly to get ready for it.

Mike Davis – Veterans Health Administration – Senior Security Architect
We have the barrier as well of excluding a significant portion of the healthcare community if we don't investigate the solutions that work for everyone.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes, exactly. So what's the implication of working for everyone and is it more than people are currently considering? If it is then it should be elevated up, I think, at a policy level pretty quickly so that there's no surprise when everybody rushes to go get a Direct address and discovers, "Oh, wait a minute. It's much more complicated than I thought," or cumbersome or expensive or whatever is the barrier.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
So the requirement in the bullet that you're talking about actually is that certificates used by federal agencies all must link back to the Federal Common Policy CA and must include the assurance level in which they were issued and the six levels are specified. So the certificates that would be used to exchange information with a federal agency, those certificates would have to include that federal level.

David McCallie – Cerner Corporation – Vice President of Medical Informatics

So my question about just the facts of the matter; and that bullet point is what I'm referring to; says that cross-certification still allows for variation, interoperability amongst people, who are authenticated at varying levels of assurance, approved and authenticated at varying levels of assurance—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
That's correct.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
So what is still now an open question is what level of assurance is appropriate for Direct users, users of Direct and this PIV card is what threw me a little bit for a loop there. Because what I was fearful that it was implying is that the Federal Bridge, now under this new OMB 1111 requires everybody to have a PIV card and I just want to make sure that that's not correct.

Mike Davis – Veterans Health Administration – Senior Security Architect
That's not correct.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Okay. Good. Thank you, Mike.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Maybe it is the concept that we talked about maybe in the last call, which was the minimum level of assurance about which there might be a few options, including one of them being this PIV—

Mike Davis – Veterans Health Administration – Senior Security Architect
Well, we were really talking about the trusted framework providers that are cross-certified being the ones issuing the credentials. The policy issue about the level of assurance of the authentication, etc. was a second issue.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes and that's the issue that's addressed in the next slide, which are questions we're posing—the next set of slides, which are questions we're posing back to the Policy Committee about the CAs, the certificates and the CAs, who issue them. This is about nothing but bridging with the Federal Bridge CA. So this is not about issuing specific credentials. Let's move ahead to the next slides in fact and maybe it will become a bit clearer. Please advance the slide.

These are slides that we would intend to show to the Policy Committee. These address digital certificates and the assurance in those digital certificates, which is what David was just referring to, as well as the assurance in the trustworthiness of the issuer or the certificate authority. The first slides here are really intended to establish a base level understanding of what digital certificates are and what they're used for. I think this slide I didn't make any changes at all to it. It just tells them what a digital certificate is, its relationship to public and private keys and a certificate revocation list, so that one has not changed at all. It's just a background. In a public key protocol, one key is public and is widely published. The other is kept secret and one is used for encryption and the other is used for decryption. That's all this slide is intended to do.

Next slide: This is the same picture that was last time. The only change I made was that there was some misunderstanding and John Moehrke pointed out that that larger circle needed to encompass both of those, but in fact, it didn't. Because what I was trying to show is that if you're Alice in this picture then you trust all of the certificates issued by your own trust anchor, which is the smaller circle. You trust all of the certificates issued by other trust anchors that she deems trustworthy, so there are two circles over there that she has deemed trustworthy, whereas on the left side, if you're Bob down there, you trust everybody in the hierarchy, so that's the essential difference that was trying to be depicted here. The depiction on the right is the Direct Project trust model and the depiction on the left is a strict hierarchical PKI.

Next slide: This hasn't changed. It was just to give them a feel for the kinds of information that is in a digital certificate.

Next slide: Here's where we really get to the crux of the matter. A digital certificate can be trusted only to the extent to which the user trusts the CA who issues it. In the Direct model, anyone could really—well, outside the Direct model as well—anybody can declare themselves a certificate authority and start issuing certificates. Certificates used by the Direct Project entities so that, by policy, they could be issued by any CA and the decision of whether to trust the certificate is left up to the communicating entity and in Direct exchanges. In other words, whether the CA is recognized as a trust anchor, as somebody they can trust.

Next slide: Here are the questions that we want to give to the Policy Committee. One is we decided to assert that policy and governance are needed around CAs who issue certificates for Direct exchanges. There are policies needed in two areas. One is defining the level of assurance that must be achieved prior to issuing the digital certificates to an entity. Identity proofing: This is exactly what you were just talking about, David.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Right.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Second is defining the mechanism for establishing the legitimacy and trustworthiness of the CA, who issues the certificates. These are the questions we're asking to the Policy Committee that are complementary, but different from the study we're recommending the ONC under take.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
But isn't bullet point, sub-point two there, that defining a mechanism for establishing legitimacy and trustworthiness of a certificate authority, isn't that essentially the same question as the bridging question, the Federal Bridge question? Because in order to bridge you're going to have to meet the bridge standards.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
No. It's a different question, because you could have assurance level five, let's say. Let's say we defined our assurance level the same as the Federal Bridge. You could meet assurance level five and still not be cross-certified with the Federal Bridge. All we're trying to ask in the first is to look at what would be the operational cost and implication of having everybody on Direct, everybody who engages in Direct Exchanges, have them get their certificates from someone, who is bridged with the Federal Bridge. The Federal Bridge, as we just said, they have six levels of assurance. You could have a CA with assurance level one—

David McCallie – Cerner Corporation – Vice President of Medical Informatics
No, not the CA. Wouldn't it be the users, who are issued a certificate? The authority doesn't have a level of assurance does it? I thought that was the certificate, the CTS policy.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes, the certificates are levels of assurance. Yes. That's right.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
So I looked at bullet point one is about individuals—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Right.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Who obtain a certificate and an identity on the network? It seems we need identity proofing and we need authentication, because you can be high proofing, but low authentication, although that is completely illogical, but those are two separate steps. Then the third point affects the certificate authority itself—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Right.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
And for them to meet standards of the Federal Bridge, that effects how they operate their business and how they manage their key store and all of those kinds of things. That's not about the users. That's about the issuer.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
That's exactly right.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
So I think it almost sounds like this is a different question, but to me it's one option. The answer to point two, one answer is possibly meet the standards necessary to become cross-certified with the Federal Bridge.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. I agree with you. Yes.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Okay. So I would add that just so that the people who haven't spent hours learning this stuff understand that that's what that's all about. It's really about the standards that the issuer has to meet to participate in the Federal—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. So what you're saying is that one way, one avenue is to have them meet the same requirements that the Federal Bridge requires, which may not mean that you actually cross-certify with the Federal Bridge, but that you meet the requirements that would enable you to.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
That's correct. Of course, if you're going to meet those requirements maybe you might as well go ahead and cross-certify, but that is technically an independent question.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
That's absolutely true, but do you think it would? I think it would really throw the Policy Committee of topic if we mentioned it here.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Well, I mean again, thinking very practically and back to Mike's point, if we move forward with Direct under the current rubric, where it's not cross-certified, then we technically are cutting out all Direct channels to federal providers of healthcare and that's a huge issue.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Wait. I just want to make sure we get the answers to our questions. So you think we should have a third sub-bullet there that says for example of a sub-bullet to the second bullet, for example, that they could meet the requirements necessary to cross-certify?

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes or you could turn it around into the use case of concern, which is how can Direct interoperate with federal healthcare providing agencies unless we meet this cross-certification? I mean this, to me, is a huge issue that is going to have to be resolved at the policy level by either creating an exemption or by pushing forward the notion of cross-certification as a requirement and putting a new burden on the people who are firing up HISPs to tell them, "Hey, you're going to have to go do this additional work to get cross-certified."

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Now, at our last meeting, before we were asking all three of those questions to the Policy Committee, right?

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Right. I think that they're all policy questions.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Well, we decided at the last meeting that first that the approach we would take is to first have ONC gather some objective data about what would be required to cross-certify with the Federal Bridge because—I'm just reminding you of the conversation. We were afraid that if we just ask the Policy Committee, "Do you think everybody on Direct should be should be the certificate authorities issuing certificates for Direct should be cross-certified with the Federal Bridge?" that the Policy Committee would come back and say, "No. That would cost too much or that would interrupt operations too much or all of these other things." So we decided before we asked the Policy Committee that question we want to gather some data; we think we need some data. So that's why we split the two apart. You're suggesting we bring them back together again?

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Well, I'm just suggesting that they are highly related and that the answer to one of them effects the decisions on the other one.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Absolutely.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
If somebody is going to drill in and say why is this a question, why is this a question that you are elevating to a bullet point on your slide, the answer is well, because it's really expensive. It is potentially of an unknown, but potentially expensive cost to require cross-certification to the Federal Bridge. But if we don't do that we cut out a huge chunk of federal providers for communication with Direct. Obviously, ONC is not going to be happy with that either. So we've got a rock and a hard place and I just want to make sure that everybody understands exactly what the issue is. I think we do. I'm just not sure that someone who hadn't sat in on these calls is going to figure it out from looking at this slide.

Mike Davis – Veterans Health Administration – Senior Security Architect
Well, isn't that part of what the investigation that we're asking for is intended to find out? I mean we think we know potentially some answers to those questions, but we don't have it in front of us or we could provide it, but—

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes. I'm just trying to connect the dots, Mike, so that it's in everybody's face, because I think it's just a big problem that is going to come to a head here in the next six months when this strong push to use Direct comes out and we've got HISPs firing up all over the place. If they're not thinking ahead about cross-certification, that's going to be a problem isn't it?

Mike Davis – Veterans Health Administration – Senior Security Architect
Well, exactly. That's sort of the urgency of having the investigation done quickly.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
So maybe it's just as a for example see notes about Federal Bridge cross-certification. I mean it's just something to tie the two together to realize this is really the same question.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Well, we want to tie it together—

David McCallie – Cerner Corporation – Vice President of Medical Informatics
....

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Without having—and this is harkening back to our last conversation—they used to be together remember. They are definitely tightly linked. They were the same question, but we decided to separate them because we felt that if we asked the Policy Committee, which is what we did in the last version of the slides; we asked the Policy Committee should all of the certificate authorities that are issuing certificates for Direct be cross-certified with the Federal Bridge. That's what we asked them. Then we decided they would come back with no; that would cost too much. So we thought before we ask them that, let's get our data. Let's ask ONC to get some data on what this would require and then go back and get the policy question answered.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Okay—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
So that's how we got to where we are and I still believe that that's—and I didn't even bring it up at the last meeting, but I thought it was a really good point. That it would be good to separate these two and get some data first and then ask for the policy because of the fear that they would say that's just too much or that's too big of a policy for us to swallow right now.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Okay. Well, I can tell you what will happen is they'll say we'll turf it to the Governance Group of NwHIN, so we can save ourselves the trouble then.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
....

David McCallie – Cerner Corporation – Vice President of Medical Informatics
All right. The question will get asked and answered, because it's an obvious, critical path question. I'm okay, whatever you want.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Well, no. If we want to put it back, I'm fine. I'm just—

David McCallie – Cerner Corporation – Vice President of Medical Informatics
No. I mean if you guys all think it's clear then it's just me trying to be in your face and there's no need for that. It'll come up.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Dixie, I think we probably need to move back to our other agenda items, so if you want to wrap up?

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes.

Mike Davis – Veterans Health Administration – Senior Security Architect
Just real quick, Walter, I would like to recommend that Dixie and you consider—and I brought up the thing about the 1111 policy memorandum and we had all of that discussion on it. I think we clarified it among ourselves, but I'm still a little concerned that maybe that particular bullet might sidetrack the main bullet on that particular slide, Dixie. I have no objection to removing it if it seems to be a controversial point that

requires more explanation than it's worth. I'm sure the investigation would uncover that regardless, so it might be better to leave the main bullet. It's a thought.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. I think that's a good recommendation, because it did sidetrack the—we want to make sure in all of these that we get our key points across and we don't sidetrack the reader. I think, Mike, that's a perfect example of where the sub-bullet about PIV cards does detract from the overall key and very important point of this needs to be investigated. I think the same applies to this slide. Yes, our key point is that the CAs have to meet a certain level of assurance, because ultimately they're going to have to be exchanging certificates with the federal government, but how do you say that without detracting from the fundamental question? That's our key challenge. But I'm going to remove the PIV sub-bullet. Okay.

As for this slide, I don't think I'm ready to show it to the Standards Committee. I would like for us to maybe take it off-line and discuss it a little bit more. So let's go ahead to the next topic, please.

Now we're going to move away from digital certificates into entity-level provider directories. I think we're running a little bit behind anyway, so why don't we just go into the ONC presentation? Well, it's up to you.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Well, thank you, Dixie. Basically, what we did here is divided this into three parts. The first part is a review of the HIT Policy Committee recommendations. You have seen these slides a few times or at least they have been distributed a few times. We haven't seen it and reviewed it in great detail. I'll spend five minutes in reviewing them very quickly, because we want to provide enough time for ONC to present.

The recommendation from the Policy Committee was divided into primarily two groups of recommendations. One was recommendations about certain technical aspects of entity-level provider directories and then recommendations about business and operational aspects of the provider directory. So this slide just talks about the recommendation of the content that should be included in the ELPD. ELPDs, of course, are entity-level and the entries in the ELPDs will be entities, not individuals.

The information about the entities will primarily be around three areas; demographics about the entity, information exchange capabilities, so the entity will have in that record relevant domains, protocols and standards they support for exchanging information, so they accept messages on HL-7 standards, CTD, CDAs. They support SMTP rests, etc. Then security information, basic information about the security credentials, the type, the location of basic credentials for authentication.

Next slide: The other recommendation, this is a business model, so this just describes some of the business and operation expectations, whether this was going to be or this is intended to be a nationally coordinated, but federated approach. So there will be ELPDs in different parts of the country and different areas and there will be certified registrars. These registrars will register the entities and then submit that data to a national registry system and there will be reciprocity in terms of registrations or entities that register with one. We're not to register with everyone else, even if they have business in other places.

The next slide, just to move to the other recommendations: The entities that should be listed are basically healthcare provider organizations, other healthcare provider organizations, such as health plans, public health agencies, other health care organizations, not healthcare providers, but healthcare organizations. Health information organizations, like operators of HIEs, others and then other organizations involving the exchange of health information business associates, clearing houses, others.

The recommendations that the ELPD would support, certain functionality, basically the functionality of supporting directed exchanges or exchange via the Direct Project, both send and receive, as well as query and retrieve. Provide basic discoverability of entity: So the ability to discover the entity that the submitter of the message is looking for basic discoverability of information exchange capabilities. So again, based on the information on the record of that entity in the ELPD; discover the information exchange capabilities that the entity supports, again, HL-7, CCD, etc., and then basic discoverability of

the entity security credentials. There was a question, actually John asked that question to me, whether this was purely a discoverability or whether the actual security credentials could be available, the public key of the security credential could be available on the ELPD and there's no reason why it couldn't. So that's one point to discuss here too.

The next slide: The final recommendations, which we specific to the Committee, this workgroup specifically, was to direct the Health Information and Technology Standards Panel to identify technology, vocabulary and content standards that will create an ELPD with multiple registrars and a single, nationwide, registry system. So basically, identify the technical elements of it.

I think this is the last slide in terms of the recommendations. Again, the general recommendation for the Standards Committee was to focus on the standards side, the technical, the vocabulary, the content standards, but within the context of the other policy recommendations, meaning the concept of a federated ELPD system with registrars and other things. But we are not here to define or discuss the specifics about those registrars or those kinds of things. We'll talk about the scope in a minute.

Next slide: So I think those were the very quick overview of the recommendations. We will get back to this when we go into the discussion later on after the presentation from ONC when we get into the description of what are the areas we want to focus on. Let me stop there and turn this. We'll hold questions until, again, after this presentation from ONC and we continue the discussion on the scope of the work we will be doing with respect to ELPDs here in the workgroup. But we wanted to give an opportunity and we're very pleased to have representatives from ONC to talk about the current approaches and needs that both, the NwHIN Exchange Project, as well as the Direct Project have with respect to ELPDs.

I should point also that Arien was very involved in our deliberations at the Policy Committee on the policy recommendations for the ELPD. So I think the policy recommendations align very well with the work and the approaches that are being used by both, the Direct Project and the NwHIN, but I will turn this—I think, Avinash—did I pronounce your name correctly? I'm sorry.

Avinash Shanbhag – ONC – Director, NwHIN
Yes. Thank you very much.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
I'm going to turn this to you.

Avinash Shanbhag – ONC – Director, NwHIN
Thank you very much. First of all, thank you for inviting me. My name is Avinash Shanbhag. I joined ONC about six weeks back and I'm delighted to be here. What I will do today is go through, as was mentioned, and talk about what's the existing functionality and facilities of that in the current Nationwide Health Information Network Exchange directory and maybe discuss a little bit about the technical details and all of that. If there are any questions or recommendations, I'll be glad to listen to them.

One tactical aspect—and I'm not able to see the slides on the WebEx, on Adobe Connect, so I will request the person running the slideshow if we just kind of work with the slides as I talk off slide. Can the person go through the slides—?

Mike Davis – Veterans Health Administration – Senior Security Architect
Yes. We're seeing the agenda slide right now.

Avinash Shanbhag – ONC – Director, NwHIN
Excellent. Thank you very much. So just kind of going and talking about going through the agenda, I'll kind of cue up one slide to review also what is a Nationwide Health Information Network really consists of. Again, this is more to kind of set the stage for further discussions.

Then, going through the current Exchange, which is really one of the trial implementations of pilot production facilities that were instantiated based on the Nationwide Health Information Network. I will go through the architecture, some of the scope around that and then get into the operational infrastructure aspect. The reason operational infrastructure is important is because that's where really the discussion and like ... about service registries, such as ... instantiation of the entity-level provider directories currently in Exchange. Within the ... to talk about the features currently that they have, some of the technical underpinnings, business scenarios that it currently supports, I'll talk about specifically the privacy and the security at a high level on how it is handled there and discuss some of the scalability, design aspects and/or challenges and also the information that it currently supports.

The next slide, which is really the slide that kind of gives you an umbrella structure to the Nationwide Health Information Network and in that what I see is that NwHIN really consists of the use of standards, services within a policy framework for health information exchange. Really, the components within that that that really form the NwHIN is really the set of specifications and we have a few of them currently via our two projects. One is the Exchange and the second is a different project, but really, what NwHIN consists of is standards and specifications and currently it supports also a software CONNECT, but again, I think with the standardization going through that we expect that many software components actually indeed provide that interoperability ....

Now, here's … that Exchange really starts instantiating the concepts previously defined on NwHIN. What you see here is a specific set of standards that are defined by NwHIN, have been adopted by this instance of ... exchange and I'll go through briefly the specifications, the services that are part of that instantiation and a very specific set of legal agreements and governance. That really gets wrapped into, I think, what everybody is familiar with, it's called ... data use ... information exchange policy framework. It's all built in a way that enables systems to use the Internet to exchange securely health information ....

Now going to the next slide, here's where I'll start defining some of the architectural principles that underpin the exchange. One of the key elements are, first of all was decentralization, the idea that there is no real central patient information repository, like an NPI or something like that. The only real central tendency in the Exchange instance is the governance body that really determines the ... and local agreements and policy ... exchange. There is local autonomy to allow systems to essentially build out to things that are more conducive to their own health information organizational capabilities with only the interface or exchange being really governed by exchange. There is local accountability, adherence to standards.

One of the key elements and that really does then get into the reasons and the ... for picking entity-level provider directories in Exchange is this principle of using service oriented architecture and based on those principles, using Web-services as the architecture for building out the need for exchanges, transport and security concerns. Again, there clearly—Exchange is one model. It's not the only model. Direct has a different architectural model, but the service oriented architectural model and the use of Web-services is really one of the principles that's governed exchange. Of course, the specifications have been built and information exchange is done … specification just so that as disparate systems get onto the network the ability to interoperate is manifested through the adherence of specifications.

Finally, I think, just listening to the earlier conversations, I think that this would be that the use public key infrastructure is central to managing security within the exchange and the whole ... is governed, that's one of two components, the other being a registry. Which is a provider directory is managed as an infrastructure centrally by the architect, by …, by the NwHIN Exchange.

Going to the next slide, this is a pictorial view of how the exchange currently is architected. The nodes, the NwHIN Nodes are really an instance. I'll go through a little bit in the next slide, but what you see in here is each of these nodes represent a vertical instantiation of services, service or services, defined through SOA principles and that adhere to the specifications that are part of our NwHIN specifications. Those are then connected by this common dial tone, which is both, at the technology level, the transport level, would be the Web-services and at the policy level it would be the governance structure and DURSA.

Going to the next slide now, the Exchange Zones: Here what I wanted to kind of illustrate was really the boundary or the scope at which the Exchange and the node really become important and which ones really are the providers, domains and that are not impacted or that do not have any bearing on information exchange. Going from like the furthest zone, the HIO Zone, HIO being the Health Information Organization Zone, really those are the systems that we expect to be managed and governed by the owner organization. They are really not the purview of information exchange.

The interface—and that's what … explored a little bit on the left side. It is called the NHIN Gateway and that's the term we use to define an instance of services that are built and deployed by the HIOs at the ... that are, again, open to public access, through secure public access or via Internet. That instantiation that ... there is the governance activities. The inner most zone, the NHIN Infrastructure Zone, which has two components, the service registry and the security infrastructure. The security infrastructure is really the certificate issuance and the management portion. The service registry, which I'll talk much more about in subsequent slides, really is the basis for our providers' current levels of information in our directories.

Go to the next slide: Just briefly on service registry. It's based on ... specification called UDDI, which stands for Universal Discovery Description and Discovery Interface, which is one of our standard build sites for access, which is a ... organization. It has information—and I'll go through a little bit in subsequent slides—about the meta-data and information that it stores that allows the participants different nodes on the network to understand, first of all, like what information, what organizations are participating and are they geographically located. Also the interfaces that they support, that is the standards and specifications that can be used to interact with it.

Going to the next slide, the slide with type of service registries features, this is really … that in the Exchange for organizational level directories or entity-level directories. The primary function of this registry is to maintain the information, as I mentioned, that is required by one HIO (the Health Information Organization) to discover the existence of another HIOs that are part of the Exchange. That is those that are governed by the policy framework of exchange and that have met the transport and specification principles and ... in the NwHIN rubric so that they can establish a successful, secure information exchange. It does not really—so again, just clarity wise—service registry does not contain information at the patient level or at the level that would have information at which to be transmitted. All consists of is information that provides kind of, I would say, the yellow pages to have information maybe available. As I mentioned, it is based on a standard UDDI (Universal Description and Discovery Interface) Version 3.0. It's an XML-based standard and it has a platform independent registry based on the development in XML.

Going to the next slide, here's a very general usage. There are a lot more features in it that I will talk about, but at a very high level an HIO that has instantiated a gateway as a provider and is now part of the network would make a secure connection to this service registry through a login process. Really, the ... node that you've mentioned here is just a scalability feature that UDDI Version 3.0 provides that allows us to kind of allow the registry information to be duplicated in a way to improve performance. The concept here is there is a secure connection made by an HIO through one of the systems or services. Then once a secure authentication is accepted, then there are some features provided on that UDDI service registry that allows … for … HIO to search for … with some context. I'll go through a couple of—the three business scenarios that it supports, but it essentially allows support of searching for other HIOs that can be searched … by geography or by certain other restrictions. Then if you get the information finally as to actual instance …—one, for example, the HIO determines the geography of a certain HIO it wants to call to get additional data. Then what it also gets from the service registry is what we call an end point or the actual URL onto that specific HIO so that it can then call to that other HIO to make a request potentially for patients, to discover patients or get accredited … information about a certain, specific patient that that other HIO has ….

Going to the next slide, this is where we describe the current features that are supported by the Exchange Service Registry. At a high level, the three business scenarios that it supports—and starting with the top—is it provides an ability that an HIO can call the registry and get a list of all of the HIOs that are

currently participating in the Exchange and all of the services, including all of the information on how to ... the services to achieve all of that information. While this is kind of—essentially the results that you potentially can get is a large amount, what this potentially supports and this supports the ability to have a local cache of the existing information that an HIO can keep. Again, this is part of the UDDI specifications that this kind of a query allows organizations to cache such data locally so that they can then do quick searches of this information without having to hit the single or even the federated but notionally I should say master service registry in the operational setting. Also, there is the concept here and implemented of the ability that once a local cache is stored there is an ability to support notifications from the master service registry, the new nodes join the Exchange. So really there is an automated way of updating this information provided HIOs stand up on local cache ....

The second business scenario, which is also quite important, is to kind of search HIOs by state. There is a demographic information that gets stored into the service registry and I'll describe that in the model. The idea here is that if you get a patient and potentially if a patient comes to a hospital and the patient describes the demographics or the geography of ... they have gotten patient care in the past, this kind of a business scenario ... allows the following HIO to invoke a query—to call in a query to the registry ... and restrict the information to only those states that they desire to be present in the results. Really, this improves the performance of querying and returning of information from the registry.

Finally, and I think about the most interesting one is the ability to get data by a unique HomeCommunity ID. The idea here is—and this is something that Exchange governance process allows is every HIO that joins the Exchange is given a unique HomeCommunity ID. It's kind of an ID of sort, a unique object identifier so that potentially if a patient comes and is aware of this HomeCommunity ID then the querying or ability to go through this directory, the service registry, and get information about that HIO that supports this patient information can be further improved in terms of performance.

The next slide, please: Talking a little bit about privacy and security, just to make sure that … the service registry has a lot of information in terms of HIOs. While clearly it does not have any patient centric information, still information about what is available on the registry is only limited—the access is limited only to those HIOs that have part of the NwHIN Exchange and that is controlled via digital certificates. So that really, the call made by HIOs to the service registry is a secure call that uses both, two-way, secure circuit layer and the information in the registry provided by that HIO is also digitally signed. So the access to this registry is only limited to those certificates that have been issued by the exchange source, so they have a common root and they are part of the ....

Going to the next slide, this talks a little bit about scalability and here the concept of master and slave is there. Again, this is part of the current specification, the UDDI Version 3.0 specification. The idea here is that when new HIOs join not only does the master service registry get those updates, the clients update that information in a secure way to the registry. The specification allows the master service registry to push that information both to slave registries that can be federated and geographically distributed and also you can see updates going through the NHIN Gateway. So those are the—that just shows the gateways of the NHIN nodes must have implemented local cache so that they are then subscribing to updates that are a part of the registry. So that does support that. The model is similar to the DNS systems that are built in here.

Finally, the next slide: This is a brief description of the model, the kind of information that currently is captured in the directory. I think at a high level the model consists of business entities and really what you get here are business names, business keys, the name of the HIO. You get descriptions and what you get here is a unique identifier for the HIO, which is the HomeCommunity, home ID, HomeCommunity ID that is provided to each HIO.

In the business service—and these are, again, standard … based on a standard model that UDDI Version 3.0 supports. In the business service, this is where you get information on the services that are implemented by the different nodes and also provides the ability to implement the standards that are supported by the services. So you could have a service with a key and a name and a description that provides both the actual end point of the service and potentially it's a specification that supports patient

discovery ... across a community patient discovery. It could also tell which profile—if it's an IHE profile, which IHE profile it supports ... that's the information that's presented in the profile name.

The version key is really to allow different versions of services be present in the sense in the future you can expect as specifications change, that not all of the systems, all of the nodes on the Exchange be able to move at the same time to an upgrade. So the idea here is there is a capability that a service and an HIO through the service registry could identify the version that is connected to a specific service instantiation. So that both the consumer organization is aware of the ... expectations or is able to package the ... appropriately or at the same time, they could negotiate an appropriate understanding of the information.

That's the last slide I think I have. Again, if there are areas that I did not cover I apologize. Please let me know if there are areas that this group wanted to hear. I would be more than happy to provide the information. There are obviously areas that we paint directories, current UDDI directory does not really. We don't have enough information about how well we can average UDDI with the patient centric needs that potentially address ... supports. There are those things that are not very ... through and haven't really addressed. Also, concepts of interoperability between different types of directories are something that we have not. Those are the things that came to my mind at least as I was building the information here. That's all I have. Thank you very much.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Yes. Thank you so much for that overview. This is specifically related to the NwHIN Exchange Project. I just wanted to see if this applies, in what ways does this apply to the Direct Project or do you know—

Avinash Shanbhag – ONC – Director, NwHIN
Yes. This does only—the information is limited to Exchange and I will actually defer to Arien to describe some of the areas where it may apply to Direct. My knowledge in Direct isn't up to snuff. I mean, really, at a high level I think there is still, in my mind, and this is kind of me just thinking out loud here; even though with the federated model that UDDI supports there is still a centralizing tendency of HIOs needing to put that information into a registry. I think I believe the Direct Project really is decentralized from even the level of ... information needing to be not put into any central registry or source settings. That would be the one thing that comes to my mind. Does that make sense?

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Yes, I think it does to me. Let me ask, actually, I don't know if Arien is on the line. He was going to try to join, but I don't know if he was able to make it or not. I know he had some time limitation. Maybe he's not on the line.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
While we're waiting, I've got a question. That was a very thorough presentation and I appreciate all of the work that you put into pulling that together. From an outsider's point of view there is a perception that UDDI is a dead protocol. I mean the ebXML group disbanded and Microsoft and IBM and some others took it out of their common stacks. It's still available, but it's been moved off to peripheral products, not in Windows Server any longer. Most current generation of programmers building Web-services aren't using it. Are you concerned at all that it's a dead-end street or has it been adequate to meet the needs of the NwHIN and projected future needs? What's your status? What's your read on UDDDI from an outside point of view?

Avinash Shanbhag – ONC – Director, NwHIN
I think, you know, that obviously all of the comments you have are well taken. I think definitely in my past also, before I joined here at ONC, I think UDDI support across the spectrum that you mentioned an update has been limited, so in that sense I think the need for having a discoverability concept in a network is important, so the need or the requirement I think in my mind does not go. The concept of if we have specifications that are implementable and have standards to which they're designed and built that in a way kind of allows us to avoid some of the issues that we had with older versions of UDDI being used at run time to negotiate the interface and be able to ... at run time.

At the same time, some of the improvements that have gone to UDDI I think, as I mentioned, the version that is currently in use here is 3.0, which is one of the latest standards and I think that has made substantial improvements over some of the previous limitations that I think Windows that you mentioned have seen. So I think I wouldn't say UDDI is .... At the same time, I would say a need to have directories, entity-level directories, is critical and I think we have, as I see in the horizon, LDAP, which is kind of more sufficient at the level of organizational level that we need. HL-7 V3 directories are present and health provider directories are there. I think they're complex and are not complete. So really, I think this is an area where potentially we may need to find a bridge between what's available in UDDI and out there, existing stuff, existing directories and see how we can improve on that while, at the same time ... requirements that are needed for ....

I mean that's kind of a long way of kind of agreeing with your .... Does that make sense?

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes. No. That's consistent with what I kind of put together with my own limited exploration of the subject. I believe the IHE provider directory profile is LDAP based. Is that right, Walter? I think you talked about that—

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Yes.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
I think you talked about that.

M
Is that LDAP based solution theoretically workable for the entity-level that we're talking about here? I would assume if it can work at the provider level it would also work at entity-level.

Avinash Shanbhag – ONC – Director, NwHIN
... that's something I have not looked at, but I'm assuming that, given that the IHE profiles have been instantiated with that I think that that seems like a reasonable approach to look at—

M
Yes.

Avinash Shanbhag – ONC – Director, NwHIN
Because really, LDAP, as a directory has scale and we know it works.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Isn't the IHE profile specifically for provider directories, right? In other words, looking up information about how to contact a provider and this, what you have here, is really intended to expose services and to discover services, not just how to get in touch with entities, right?

Avinash Shanbhag – ONC – Director, NwHIN
So I'm not very familiar to tell you, frankly, that the IHE has care provider directories. That's something we need to take a look at and I would like to take a look at. But you're absolutely right that the UDDI ... that is currently supported by exchange is really for services and service end points and really that's foundationally based ... if you have a service oriented architecture with services ... being used for systems-to-systems information exchange.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
But wouldn't it be true to say that UDDI supports both, business entity, as well as the business services; whereas, LDAP is entity or individuals? I mean I'm just—

David McCallie – Cerner Corporation – Vice President of Medical Informatics

But even then—I mean just to jump in because I just went to the IHE page on their provider directory and it does have support for organizational directories, organizations that provide or support healthcare services, such as hospitals, counseling organizations, health information exchange—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
I didn't mean that kind of services. I meant SOA, exposed Web-services, not services that they offer. You know, UDDI is really for exposing Web-services.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Right.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
LDAP is for really finding organizations that provide healthcare services, yes, but I don't think it's ever intended to for the same purposes that UDDI is intended to fulfill.

Doug Fridsma – ONC – Acting Director, Office of Standards & Interoperability
Yes. Avinash, fantastic. Thank you for all of the work that you put into the presentation. I think the thing to recognize is this is the way the current NwHIN specifications have been written and how the current pilots have been operationalized. The great thing about Avinash, who is now sort of assumed the NwHIN director is that he comes in and we are in the process, I think, of doing an evaluation of what the current specifications look like, what has worked in the pilots and what things we need to help improve and really trying to make sure, as we look towards the future and the future is going to contain different kinds of protocols, like Direct. How do we need to update the services and the standards that are expressed within the NwHIN to accommodate things like Direct to be able to continue to incorporate the recommendations that we're getting from the Privacy and Security group and the Directories Projects and make sure that we've got the right set of building blocks that are there.

So part of the thing that can be very helpful from our perspective is as you guys are deliberating and trying to figure things out, understanding precisely what the requirements are and I think you make a very important point, Dixie, about UDDI being very useful for finding Web-services. One of the things that UDDI currently does is that if somebody, say the CDC, says, "I'm not interested in query response. I'm only interested in sort of anonymized data," the UDDI contains that and helps orchestrate such that queries don't necessarily go to someone in the UDDI that isn't equipped or exposing those kinds of services. So understanding, getting your input into whether this is a scalable approach, whether there are things that are missing in this, as we think about what the building blocks are we know we're going to have to have directories. We know we're going to have to identify in a Web-services environment where the services are and what are the features of them. Helping us as we do sort of this deep dive into the specifications and are trying to determine what are the most appropriate and what are the best pieces to include, getting that kind of input from this group is going to be, I think, really essential.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
That's really a key point, because the charge that was given to this workgroup from the Policy Committee really describes an LDAP type directory service. It doesn't really describe a service that would be useful in discovering Web-services or those that you've just described. I wonder—I mean if I'm prescribing a standard for strictly discovering information on how to contact somebody I would say, "Oh, yes, that's an LDAP directory. Sure enough." But does that mean that a year or two down the pike we're going to say that directory needs to also expose Web-services and oh, by the way, it's really not well suited for that? How do we go about within the current structure of getting standards achieved; and my question is really to Doug; how do we go about making sure that we are specifying requirements that are suited for what this directory really needs to be able to do?

Doug Fridsma – ONC – Acting Director, Office of Standards & Interoperability
Well, I think part of the issue is that if you've got a square peg you shouldn't pound every round hole. I think we need to make sure that we've got the right approach for the right problem. So I think that the comments that we're getting from this committee—I mean yes, this is a UDDI and there are some challenges with that and it may not be exactly what an LDAP directory would provide, but to me you sort

of step back one level from that. If what we're trying to do is discover services, maybe there is a way to do that that's different than, say, a yellow pages directory that we have.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes.

Doug Fridsma – ONC – Acting Director, Office of Standards & Interoperability
I think it's important to sort of understand what we have right now within the NwHIN and the specifications. This group is so really, I think, technically astute. It's helpful for you to understand kind of what's out there now. Now, you could come back and tell us that given the requirements that we see going forward, here are modifications that we would suggest or here are some things that may need to change or maybe the charge that you have is somewhat different than what the current NwHIN infrastructure offers. But I think understanding that and kind of knowing how all of those pieces fit together is really important.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
I mean the gorilla in the room is the question about whether these future services should in fact be based on traditional Web-services, SOA Web-services, right?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
I mean if they are going to be based on Web-services then UDDI is designed to be a discovery mechanism to find them. It's hard to argue against that, but that's not really the question. The question is whether these things should in fact be based on the Web service model. That's a gigantic controversy. I mean 10,000 million Web pages on that controversy. I mean when we did Direct, it was the heart of the debate in Direct. It was RESTL versus the Web service model. We ended up picking a choice that was neither ... and maybe that's why is because it allowed both sides to calm down. But this is to me the fundamental question; what are the implications for high scale systems in terms of the fundamental model that you build around? The Twitters and Facebooks of the world are not using Web-services.

Avinash Shanbhag – ONC – Director, NwHIN
Again, I'm sure I'm stepping on sacred ground here, but again, from background I mean obviously I think that there is no one solution for all .... Clearly, stuff like REST and even the ... 2.0 activities that Twitters and Facebooks that you see have use cases that for which a SOA may be too big or too complicated or too much of a barrier. But there are certain ... activities that are offering in HIOs, transactions, management, security at the SOA level, so the ability to cross transactions. Again, looking through the looking glass, I don't know if both of those can be achieved as a complete ... by some of the aspects that I should talk about without Web-services. Do you know what I mean? So there is no real one solution that fits all, but I think the ability to have this suite of transport elements that can be picked and chosen based on the need may potentially be the solution. That's where directories miss. There could be more than one directory architecture and specification depending on what's consumed by a consuming organization.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes. I'm not personally going to mount an attack on Web-services or to defend a RESTful approach or any other one. I just want to point out that that is a major controversy in the design of large scale systems and that's been raging now for the last seven or eight years. It obviously has to have some impact on what we would recommend. It's a big debate, far bigger than healthcare.

Doug Fridsma – ONC – Acting Director, Office of Standards & Interoperability
I think, David, it's an important point and I think you are right. It's not something I think that we resolved in the Direct discussions. I think we clearly identified some of the challenges that we have. One would hope and I sort of say this over and over again that as we think through these issues, which are really, I think, critical that we take a path that doesn't eliminate future options. Maybe that's the best way. So I talk about the path of least regret. That we want to make sure, for example, if what we said is that we

have to use UDDI as sort of a directory service going forward that may create challenges if what we discover is that our RESTful approach or that there are other market forces that drive towards different solutions. If we commit, say, to an LDAP approach and then we need to have services discovery we have to figure out how that might work with these other kinds of directories as well. I don't think if we've talked a lot about ultra-large-scale systems and the need for managing the complexity that ultra-large-scale systems have. Most people would agree that it's extremely challenging to have sort of a singular approach in an ultra-large-scale system because invariably there are going to be challenges that will come up that that singular approach won't be able to do particularly well.

So I say that not by way of answer, but really as challenge. I think this group we really, knowing where we are now with NwHIN specifications and where we are now with the requirements that we have around Direct I think it's helpful to help frame how best to provide options or input or other things like that as we try to figure out the best path forward. So I welcome those kinds of discussions. In fact, I think Avinash is working right now on getting sort of independent, third party analysis of the specifications that we have just to say are we on the right track. Does this make sense? Are there things that we should be considering? Are there things that we've missed? Is the world that we live in now different from when the initial conceptualization of the specifications, has that changed? So I think it's important for us to not choose a particular solution and try to get them all to fit in there. I think Avinash sort of articulated that; that there are some things for which Web-services really don't make sense.

Are there things that it does make sense? That's a question I think that you guys can help us with at some point or at least put that off in an area for future discussion if it's outside the charge of this group.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes. I'm sensitive to the relative urgency of some of these debates. Yesterday's HIE Workgroup call was all focused on the timetable for phases two and three of meaningful use and whether or not HIE could be required. If we're still debating the fundamentals of REST versus SOA versus a more heterogeneous mix it's unlikely that there will be standard HIE services available for either phases two or phases three. I mean there is some urgency here that has to factor in as well I guess is all I'm saying—

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
David, I think at the meeting we had yesterday; and I assume that's the one you're referring to, the full-day—

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes. I was just listening just to parts of it.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Okay. Yes. This was the Information Exchange Workgroup of the Policy Committee, which actually is the one that developed the recommendations on the provider directory. The other important element that was highlighted was the specific areas for HIEs that they need concrete activity defined and they certainly include provider directories. This is one of their clear responsibilities within HIEs and clear functions that they will play as an HIE to have a provider directory that supports and allows for and creates the ability to do exchanges within the HIE.

I mean there were several other things, which actually the IE Workgroup will be probably getting into that were highlighted by some of the members, who are the leads of some of the state HIEs around the country. But provider directories were one of them. I think what I'm hearing from this conversation and maybe it's reinforcing what you said is that really the need to explore not just a single solution, but alternative ways to fulfill different needs. So it's defining the need as we have heard during this conversation today at NwHIN and the direction that's been taken, plus maybe other things within NwHIN exchange that might not be specifically related to the support of UDDI. Then look at the Direct Project, which is looking at this differently I think and using a different approach. I don't think, as I understood it from Arien's discussions in our conversations on the Policy Committee, that the Direct Project is not using UDDI. They're using an LDAP-like approach with DNS services. So I think when you look at the two

approaches and the two perspectives and the two different sets of needs I think we will be able to at least identify a couple of pathways, I guess, to address this issue and make recommendations around those.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes. I mean heterogeneity is unavoidable given the size and complexity of what goes on in healthcare and maybe if you believe in the philosophy of ultra large scale systems heterogeneity is not only unavoidable; it's highly desirable. I would support that. I am a little bit concerned about this sort of artificial distinction between entity-level discovery and provider level discovery. Because I think for many providers the distinction between when I'm looking for an entity versus when I'm looking for a person is pretty subtle and fluid and might, in fact, vary based on what you found when you tried one and didn't get what you wanted. The notion that you would have to use completely different systems depending upon whether you're looking for an entity or for a person at that entity strikes me as not a very smart place to draw the distinction.

Doug Fridsma – ONC – Acting Director, Office of Standards & Interoperability
Well, let me just, first of all, interject to say that Arien is on the phone now, so we can ask some more directed questions if we need to. But I think the distinction isn't between entity and organizations. I think that you're absolutely right; that that distinction gets blurred. I think Dixie made a better distinction in the sense that this was looking at Web-services versus entity versus organization. So in that regard the UDDI I think was a reasonable choice. I think the question is is that a choice that we need to continue. I would not want to take something that just because it's out there now in a pilot phase and that we're using it to do Web-services that we try to morph it into something that it may not be well equipped to do, but we have to figure out how all of these pieces fit together.

I think just by way of example, certificates and the SAML assertions that they use to manage security around the NwHIN, it's very different. It has very different underlying assumptions. There is this notion of local autonomy and the ability to reject an assertion that you don't agree with, but there is a way to make certificates and SAML assertions work together; not seamlessly; not perfectly; but certainly, there are ways to make them more compatible. So the question is can we do the same thing around some of the other things that are out there that are important, like directories and what would that look like.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes. I mean that was where I was headed is that I think the partitioning between if you were to partition the technologies and say, "Use UDDI for discovery of entities and organizations and use LDAP for the discovery of individuals," I would say that's the wrong partitioning. I would suggest that it's better along the lines of what I think Dixie was hinting at is use LDAP for the discovery of entities where the discoverer is a human and use UDDI for discovery of services where the discoverer is a machine.

Arien Malec – RelayHealth – VP, Product Management
I have another conceptual approach for this, which I think actually we played out in the Direct Project and that's the Internet notion of the thin waist of the hourglass. For people who aren't familiar with that notion, one of the success factors for the Internet has been that there are a spare set of services in the thin waist where TCP/IP, DNS and then increasingly HVP and SMTP are that thin waist. Then below the waist, there is a bunch of different ways of getting the job done. With respect to TCP/IP, I could have a mobile network. I could have a Wi-Fi network. I could have a wired Ethernet network. There is a whole bunch of topologies that can get the job done. Above the thin waist, there are a bunch of different application services. I can have a simple Web server or I can have Facebook. I can have Twitter, etc.

I think the discussion that we're having here is what is that thin waist for health information exchange and what services need to be uniform and what services are better out of the thin waist and at the level of heterogeneity of desirable heterogeneity. So I think one of the Internet lessons is that heterogeneity is inappropriate at the waist because I don't know. If we can't agree on TCP/IP and we can't agree on HTP and we can't agree on DNS then I don't know how to reach you. But heterogeneity is not desirable at levels above that and levels below that and I should have flexibility in terms of whether I connect wirelessly or wired, whether I use Facebook or Twitter at that level.

Doug Fridsma – ONC – Acting Director, Office of Standards & Interoperability
It is desirable at that level is what you mean?

Arien Malec – RelayHealth – VP, Product Management
It absolutely is desirable at that level.

M
The question is where would you use UDDI and LDAP?

Arien Malec – RelayHealth – VP, Product Management
That's exactly the question and with NwHIN Direct, we looked at the thin waist as being addressing and transport and then I think we settled on addressing transport and identity as being managed through certificates, as being essentially a thin waist for directed exchange. In orchestration and content and those kinds of things appeared above. As Avinash knows, he and I have been discussing for a while, patient discovery as potentially a foundational entity discovery and patient discovery as potentially foundational services. One of the issues that I think we're running into at this point is that it's with the current approach and for people who don't know, the current patient discovery approaches us an OID based identifier for communities. It's difficult to get universal addressing, universal discovery of entities. I do think that that universal discovery of entities is part of the thin waist and potentially patient discovery is part of the thin waist. Getting those right and getting them universal will end up being foundational, but that's an opinion. I guess the conceptual structure that I would propose is the thin waist should be spare, highly reusable across different workflows and uniform and that part of the wisdom here is deciding what's in that thin waist and what's above it.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
You're mainly describing a thin waist of technical capabilities—

Arien Malec – RelayHealth – VP, Product Management
So I'm proposing a conceptual structure where we identify a thin waist of technical capabilities that have a high degree of reuse across different usage scenarios.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Right. I would certainly agree with that. I was merely suggesting that the arbitrary distinction of entity discovery, provider discovery and patient discovery. That those three separate domains, which were handed to us from policy based on policy constraints rather than on technology constraints or on use case constraints shouldn't force us into picking three separate technologies that match those three arbitrary cut points between entity provider and patient.

Arien Malec – RelayHealth – VP, Product Management
I think that's exactly right. Then one additional thing to think about that was an experience through Direct is one of our founding assumptions was that if you knew the address you needed to be able to get the message through. But that the process by which you know the address was something, so we kind of took our cut point as the thin waist is I have an address. How do I get the message to that address? But address discovery we explicitly punted to the upper parts of the hourglass and there may be the same kind of approach here. If you've got the address then getting the message through is foundational, but how you get it and you discover that address may or may not be.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Although our charge here is to come up with a way of discovering entity addresses.

Arien Malec – RelayHealth – VP, Product Management
Right.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
I mean so now we can punt and say we don't want to, but I think we're expected to come back with some kind of guidance. I guess it's going to go back right straight to you and Doug.

Arien Malec – RelayHealth – VP, Product Management
And Avinash. I would say right now we don't have a mechanism for I know that my record is held at North Oakland Family Practice. We don't have a mechanism for getting from that knowledge, which I can give to a clinician, and the way of reaching my record.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Yes. When you say my record I mean you're engaging the patient, which is a little more elaborate. I think the scenario that we build as part of the work of the Policy Committee on the ELPD specifically, we haven't finished. I mean we finished the ILPD recommendations. They're going through the approval process of the Policy Committee, but the ELPD scenarios, and this is the 9210 rule, which is the vast majority of exchanges really are a hospital is sending a discharge summary to the clinic where the patient's record is and the primary care provider is.

Arien Malec – RelayHealth – VP, Product Management
Yes.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
They're not generally sending it directly. I mean they're not sending it to the primary care provider address in my personal e-mail. They're sending it to the facility where that primary care provider is and the patient record is. Generally speaking, the entity that receives the message is an entity that places that message into an internal distribution process for opening the message, parsing out the content to find the right patient and make sure that the data on the discharge summary that came from the hospital gets put into the patient's EHR record. Then potentially the system fires out an alert to the provider saying, "Hey, you have a patient that is part of your panel that has gone to the hospital and the hospital sent us a discharge summary. It's here for you to see it when you see the patient." I mean at the end of the day most of the cases are really around entities sending data to entities. Now, if patients send data to individual physicians we have some mechanisms and that's something out of the scope for this particular—

Arien Malec – RelayHealth – VP, Product Management
I would completely agree with that. I was actually posing a case where I tell the clinician, which is, I think, a pretty typical scenario. I tell the clinician my record is currently at North Oakland Family Practice and right now they call or fax or hopefully soon, send a direct message and get the record sent over, but that's a slow, cumbrous process. If we want more universality, more nationwide connectivity we need to have a way for me to tell the clinician my record is at North Oakland Family Practice and that clinician to look up the location of my record and retrieve it.

M
But that presupposes an architecture by which he would do that and are we too presuppose the current NwHIN architecture—

Arien Malec – RelayHealth – VP, Product Management
I don't think so, but I think that this notion of an address where a record may be held is foundational to a bunch of different workflows.

M
But that address could be as simple as an HTTP Web page—

Arien Malec – RelayHealth – VP, Product Management
True.

M
Or it could be as complex as a set of SOAP services that support XCA and XPD, XPCD. I mean those are really different technical infrastructures, right?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes.

M
It seems like those come first.

Arien Malec – RelayHealth – VP, Product Management
These are exactly the kinds of questions that I think we've been struggling with—

Doug Fridsma – ONC – Acting Director, Office of Standards & Interoperability
Yes.

Arien Malec – RelayHealth – VP, Product Management
About what is that and it really comes down, at least in my conceptualization, to what is that thin waist.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
So let me suggest this, because we have about 20 minutes before the end of this call. Let me go through the last few slides just to give you a perspective, I mean a picture of the concept of ELPD and some of the scope that we thought would be appropriate for us to work on. We certainly are not going to be able to solve this problem in just one call clearly, so we're going to have to work off-line probably with a smaller group of people just to basically hash out all of the issues and details and bring back those to the workgroup for further discussion.

So let me, if you can advance the slide one more on the screen; one more, please: So this is what you see on the screen if you're on the screen, we're on slide number, I guess, 26 of the deck, the presentation deck on the document. This is basically conceptually, what we thought at the Policy Committee level; that the ELPD on the one side is a registration process for entities to register to the ELPD registrar, who has a local ELPD and then there are three cases of that if you can see there. All of those local ELPDs get published to the ELPD national registry system. Then on the other end, there is the queries and responses from entities and different organizations and even individuals, as in individual providers, looking for information about an entity. So conceptually, that was the approach that we worked on with the Policy Committee and the recommendations reflect this approach.

In the next slide, I think is where we identify some of the areas where we saw standards needed and some of the standards are policy level standards more than technical standards. So those are in the left-hand side where the box is gray at the bottom where it says, "Policy Needs." On the ELPD register, there is certainly the process of ELPD or registrar certification, the certification of the actual ELPD itself, the guidelines for verification and validation of entities that will be applying to be listed under the ELPD and then the registrar reciprocity. All of these are policy level elements that ELPD registers will need. ELPD registrars can be anyone in the entity, whether it's the HIEs themselves or entities outside the HIEs. When I say the HIE itself I mean the organization that operates an HIE in a state or in a region.

Then the standards, going into the technical standard side, there are standards for the ELPD structure and content, the little blue box at the bottom. That's one of the areas where we thought it was necessary to develop and establish standards for the actual ELPD to use a common content. Standards for the ELPD message that goes from the ELPD to the national registry for ELPD submissions; then on the other end, standards for the query and response messages; and then at the end, some certification criteria for EHRs to support the ELPD messaging structure. So those were structurally, I guess, the four areas where we thought technical standards would be needed and the work of this workgroup would then focus on those. So that's just the underlying concept.

I think the next slide just highlights some of these even in more detail, so if we go to the next slide, there is a description of the ELPD structure and content standard requirements that would be needed to support this concept that we've been talking about really, the discoverability requirements of the entity, the information exchange capability.

I want to point out I don't think in the recommendations from the Policy Committee we precluded the concept of a business service discoverability. It was just not listed or outlined explicitly and there was no presupposed assumption that the ELPDs would use some sort of LDAP only to discovery entities, but the services would also be possible to be made part of this. To support links with ILPD, so there's also the need for ELPD to link to the ILPD and the intent, the expectation is that for each of the individual level provider directory entries there will be references that point to one or more entity-level provider directory entries. So me, as a physician, I have five different places where I practice, including two hospitals and three clinics and so I would have one entry in the ILPD, but there would be five references to the ELPD to the five different ELPD records or entries.

Then minimum data set, the definition of what's the minimum set of data that need to be part of the ELPD, the data elements that would include this element necessary to support the functionality of it. Then the other one is a submission to the national registry, so the publication and posting protocol from the ELPD itself to the national registry.

The next slide: The ELPD query coming from the entity that are looking for information on the ELPD so the query language and the messaging. Then there's the EHR certification standard and criteria, basically, recommendations that would be expected to be met by EHRs to support the messaging needed to do queries and use the ELPD structure for conducting exchanges. So this would be something down the road that would be part of a certification process or part of the standard for certification for EHRs. So those were the four areas that we thought we would work on in terms of recommendations.

The next slide I think is the last slide that highlights some of the sources and we didn't list here UDDI, so that's something we can add certainly here. We should add it certainly, but at least two efforts, two known efforts on this area are the IHE provider directory profile, which is a profile primarily that supports management; it's noted in the slide here; of healthcare provider information, both individual and organization. It supports the querying against the directory of healthcare providers and support the feeding of information to the directory. So this is a profile that specifically addresses some of the standard requirements of the messaging side and perhaps, of course, some of the content elements.

HL-7, the SOA Workgroup has a project on health service specifications that there is a component of that project that's focusing specifically on the healthcare and community services provider directory, which is an on-line facility that I think is described that will enable practitioners to locate other practitioners. So these two efforts are sort of ongoing and are sources of information to help define the standards that would be recommended ultimately by us on entity-level provider directories. Again, there are others, like UDDI, which we would need to list here as well. Maybe people know about other efforts that are going on in defining and describing this.

Certainly, another source that we can look at is how other countries are addressing this in much larger scale, like Canada and Great Britain and others and see how they're handling this process—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Walter, I think these two are more profile. UDDI is a standard, just like LDAP, so I think that these are appropriate like you have them.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Yes. What I'm doing here is listing sources, including profiles, as well as, hopefully, standards.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Well then, LDAP and UDDI and others, LDAP and UDDI are probably—I think you have it fine just like it is. I have a question. My question is really triggered by David's comment before. I have specifically kept straight focus on enterprise level provider directories here because that's our charge that was given us. But I agree with David and with this IT profile here too that I'm not sure how much sense it makes to have an individual provider directory and an enterprise level provider directory and how practical it will be to use them both. So I have two questions. Number one is earlier we had a national level picture, what do

you call it, ELPD National Registry System. Do you think, based on your participation with this HIE Workgroup, is there likely to be an ILPD National Registry System?

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
No.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Okay. Number two is should this group—we presumably will be also getting a charge to do an ILPD set of requirements. Should we wait and do both of them together?

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Well, I mean there is certainly the opportunity to wait. The final recommendations on ILPD will be presented April 13th to the Policy Committee. For full disclosure purposes, I co-chair the Provider Directory Task Force of the Information Exchange Workgroup, which I am a member of. So I'm fairly well familiar with the recommendations certainly. There was much debate and discussion about the need to separate the two or the possibility of having the two together. Part of it was really that for the individual provider directory there are many entities that already have those. Kaiser has one. Every provider organization has an individual level provider directory. This is clearly much more complex from a scalability perspective issue about whether you mix together entities and individuals and then cross link individuals with an entity when in reality the need is for allowing the exchange and supporting the exchange of information from two entities or from an individual to an entity or those kinds of things.

So the IHE profile clearly, although it includes, of course, individuals and organizations, the IHE profile goes more to the messaging itself. Not so much to the messaging to the directory and messaging to the directory from a seeker of information and messaging to the directory from individuals and organizations that are going to update the record or create information in it about them. So the IHE profile is not about creating directories and the standard for creating those directories. It is the messaging part.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
So the ILPDs, will they be feeding into this national registry system? Why are we specifying if they're within the organization? What's the external exposure to them?

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
To which ones?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
The ILPDs.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
The ILPDs will have, according to the recommendations we have right now; these are not final, of course, and they're—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. I know I'm asking an unfair question, but inside—

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
The ILPDs are control access directories.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
It seems to me there's kind of a too pure separation here maybe. I mean it makes sense from an analytic point of view, but from a use case point of view—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. I—

David McCallie – Cerner Corporation – Vice President of Medical Informatics

A provider who has to contact, for example, a nursing home in a different city that he's not familiar with, because he needs, for whatever reason, to refer a patient there, they're moving or he wants to get in touch with someone at that nursing home to set up the right process to transfer. I mean he might start out with a very broad query that's looking for a nursing home by some broad category or maybe just the name of it. Then he might want to say who is the senior staff physician and if I can't find that I'll take the senior staff nurse and if I can't find that I'll take the senior administrator and I'm going to send them a direct message and get in touch with them about transferring of a record. I mean it could bounce all over the map in a single conversation.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
We talk a lot ... providers are their own company.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
That's not precluded by the—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Providers are an entity as well, so do I put my listing in both?

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
No, that's not precluded, David, by this concept of separating them. The ELPD includes information, of course, about the entity, so if you're looking for a nursing home there are search capabilities in the ELPD that point to the entity and then inside that nursing home record in the ELPD there will be information about contact for individuals.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
But if they are supported in the very different technology service domain it will make seamless navigation of the use case difficult—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Or it will certainly make it harder for people to build systems that hide the incongruities.

Arien Malec – RelayHealth – VP, Product Management
That's not necessarily true if I think about directories for HTTP, for example. I've got the DNS. The DNS allows me to look up anybody's Web site and then I've got Google and a whole host of tools that allow me to figure out which Web site and which URIs I want to go down—

David McCallie – Cerner Corporation – Vice President of Medical Informatics
But you're jumping all around at that point, switching between different kinds of services. That's the state-of-the-art today. I mean I can look up a nursing home with half a dozen different tools today and find providers.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
I mean that's where we are already.

Arien Malec – RelayHealth – VP, Product Management

I guess my only point is that the thin waist of the hourglass may not include standardization of all of the different ways that I discover who's out there and what services they offer. That may be desirable, but it may not be necessary.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes. I mean there are so many different use cases here, as you pointed out. Discoverability of a patient, where the patient has their record is very different from discovering how to contact someone at a known place where the patient has a record, which is very different from discovering a known place by name, but you don't know how to contact them because you want to do an open-ended referral. I mean there are so many use cases. It would seem that we should seek from a technology point of view I like your thin waist metaphor; to minimize the number of underlying structures, minimize the number of different underlying technology services, so as to make it maximally flexible as someone navigates up and down through the layers of what they might be trying to discover. I would carve patients out as a separate space, because that gets into the PHI question. But on the provider and entity side if they were all in an LDAP service, for example, to the degree to which we agree what should be published, which is the policy side of it; then you can navigate up and down that hierarchy with relative ease. If entities are in UDDI and providers are in LDAP and direct addresses are in DNS it just makes our life much harder.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
So even the same technologies, but different spots ... different services, one for entities and one for individuals—

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes. I mean you know—

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
I'm sorry to interject here. I know it's 1:00 p.m. and we're supposed to close the call. I think what I would suggest as next steps is maybe a smaller group. David, I don't know if you have some time and I would ask John and I don't know if anybody else in this call would be interested in kind of getting together off-line to hash out some of these details. There is detailed use case descriptions on the Policy Committee documentation of both ELPD and ILPDs of different use cases; hospital to clinical, clinic to clinic, hospital to lab or clinic to lab, labs to clinic or clinic to pharmacy, those kinds of things. So rather than hashing off all of those points here it might be worth having a smaller group.

David, I don't know if you'd be interested in having some off-line conversations on that, but I'm going to ask John Moehrke, who has helped quite a bit in developing the IHE profiles and I don't know if there are any others in this group here on the call that would be interested in that off-line—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
I know the VA has its own directory already, so it might be useful for Mike, if he's available, to help you out there.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
I'm certainly willing to contribute. My schedule over the next couple of weeks is complicated by a number of off-campus travel. I'm doing some conferences and stuff, so it's a little bit tricky, but I certainly would respond to an invitation if I can. I'm not an expert in directories. I'm just trying to think through, put my provider hat on really and how would I use these things.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
I think it would be worthwhile if we could to address the ELPD and ILPD together.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
It certainly fits Arien's metaphor of keeping the waist thin.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

I mean this workgroup addressing them together. I don't mean to propose that we do one standard. I'm far away from that, but I think it would be worthwhile to consider both use cases together rather than sequentially. That would be my recommendation, even if we end up with two different standards, because they are, as you've pointed out correctly, David, they're so tightly intertwined and interdependent. What do you guys think?

David McCallie – Cerner Corporation – Vice President of Medical Informatics
I like that simply because I do think they blend together. It doesn't mean they have to be the same technology, but you don't want to create a gratuitous technology difference simply because the Policy Committee dealt with these things in different months.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Right. That's exactly it. They're in—

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
No. Wait. To the Policy Committee's defense I guess, this wasn't really like we should do this first and then the next one. We started talking about this together and then decided that from a policy perspective, there was a need to and a benefit of separating the two and then we started talking about the ELPD first. But it wasn't a convenience issue. It was really more of a decision to separate the two structurally and conceptually and then develop recommendations on each of the two.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Yes. I understand that, but the fact that we get them sequentially doesn't mean we have to decide on the recommendations sequentially.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. Exactly. I mean I think—

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Not if we expect that the—I mean, yes, if we intend that the recommendations—I mean the urgency, there is some urgency on the part of both the HIEs out there, as well as, I think, ONC in trying to get something moving, but the urgency is not like weeks or the next two weeks. So I would agree; if we wait until April 13th when the Policy Committee will vote on and hopefully approve the recommendations on ILPD then we get the two together and we can have a single set of conversation around them.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. I think they'd be more likely to be complementary if we thought about it in the larger picture. I think we could work through some use cases, like David has presented today.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Yes. Like I said, we do have detailed description of use cases already in both ELPD and ILPD. They are intended to be complementary. Clearly, we link the ELPD to the ILPD in the policy recommendations and in the ILPD recommendations, there is also the expectation of linking the ILPD to the ELPD, so there is an ongoing communication between the two. In fact, there is an expectation that there will be some standard to help that type of an exchange, but—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Okay. I'd like to propose that I run it by our standards chairs and I'm sure that they'll be fine with it; that we really postpone our delivery of recommendations to enable us to deliver the recommendations on ILPDs and ELPDs at the same time. In the meantime I would like to hear about what the Direct Project needs on directories are and I think we also could benefit from hearing what the VA is doing with their own directory, because that will need to be factored into the national directory. Does that sound reasonable?

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
I would just add that it would be helpful to hear from a couple of state HIEs.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Excellent. Yes. I agree. I agree. I think that would really help inform our discussions and our ultimate decisions so I think the quality of the product that we would put forth would be improved as well. So I think that that's what I would like to see us do.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
And by the way, we did at the Policy Committee IE Workgroup held a hearing, a full-day hearing on provider directories, so there's that reference material as well.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Oh, could you—?

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
I'll forward a link to that.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
That would be great. Thank you. Thank you. I didn't realize that. Okay.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
All right. I'll turn it back to you.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
All right. What I have is I'm going to inform or ask or request to John and John that we extend our deliberations on the ELPD and ILPD so that we can make sure that their recommendations are complementary and consistent. I'm also going to follow up with a couple of modifications, just a couple of slides on our digital certificates that I'll send out. Are there others? Walter and I will schedule some discussion with Arien regarding Direct and with David or Mike on the VA and look to some state HIEs as well, so we'll follow up on that.

Are there other follow-up actions?

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
The only question is if you move the slide one forward, we do have a scheduled call, actually, a couple of more if you can move them forward. Thank you. So we have a call on March 24th. I don't know if we need that since the purpose of that call was to continue the discussion on directories and I don't know that we need to—

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Well, we can have one of these presentations then.

Judy Sparrow – Office of the National Coordinator – Executive Director
Yes. You can invite Arien and maybe Mike Davis and a state HIE to present.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
Okay. If we can pull that together that will be—

Judy Sparrow – Office of the National Coordinator – Executive Director
Yes, we can do that. We need to do public comment too.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
The other source of provider directory service that's probably in most widespread use today is Surescripts.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes.

Walter Suarez – Institute HIPAA/HIT Education & Research – Pres. & CEO
So we should hear from them too, yes?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. We could, yes.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
I mean who is our Standards Committee—

Judy Sparrow – Office of the National Coordinator – Executive Director
Cris Ross.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes.

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Cris Ross can help us.

Judy Sparrow – Office of the National Coordinator – Executive Director
I'll ask him.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. Good. Thank you. That would be really useful, I think.

Judy Sparrow – Office of the National Coordinator – Executive Director
Yes.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
This is a tough issue, so—

David McCallie – Cerner Corporation – Vice President of Medical Informatics
Oh, yes.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Actually, the guy who is on PCAST, Judy, who is from New Hampshire—

Judy Sparrow – Office of the National Coordinator – Executive Director
Oh, yes. Hunt Blair.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Hunt Blair has scars from implementing their provider directory.

Judy Sparrow – Office of the National Coordinator – Executive Director
Yes. I'll send an e-mail to Hunt and to Cris Ross and Mike Davis and Arien to scope them out on the 24th.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. Good. Thank you.

Judy Sparrow – Office of the National Coordinator – Executive Director
Yes. Okay. Are you ready for public comment?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences

Yes. Thank you.

Judy Sparrow – Office of the National Coordinator – Executive Director
Operator, can you see if anybody wishes to make a comment?

Operator
We do not have any comments at this time.

Judy Sparrow – Office of the National Coordinator – Executive Director
Well, thank you, everybody.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
I just want to say one more thing. I wanted to thank Avinash for being with us today and for giving us the excellent presentation about the NwHIN. I do have a question; how do you pronounce that? Congratulations on your new job, Avinash. We're looking forward to working with you.

Avinash Shanbhag – ONC – Director, NwHIN
Likewise. Thank you very much. I had a great time listening in to your discussions. Thank you.

Judy Sparrow – Office of the National Coordinator – Executive Director
Thank you. Good-bye.

Participants
Good-bye.

Public Comment Received During the Meeting

1. Doesn't Alice have a line to the other CA she is connected to?